AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A computer-implemented method for modeling a target system, the method comprising:

identifying a first block that represents multiple component models in a block diagram model of a target system;

displaying a user interface in response to a user action, where the user action includes selecting the first block, the user interface including a mechanism that provides the user with the multiple component models;

receiving a user selection that selects a first component model from the multiple component models;

incorporating the first component model into the model of the target system using the first block;

saving the model of the target system that includes the first component model in a memory; and

switching the first block to represent a second component model by selecting the second component model in the user interface without replacing the first block with a second block representing the second component model.

2. (Canceled)

3. (Currently Amended) The method of claim ~~2~~ 1 wherein the component models belong to a category of atmosphere models that include at least a non standard day atmosphere model.

4. (Currently Amended) The method of claim ~~2~~ 1 wherein the component models belong to a category of wind turbulence models that include at least a discrete turbulence model.

5. (Currently Amended) The method of claim ~~2~~ 1 wherein the component models belong to a category of equations of motion models that include at least one simple variable mass model and at least one custom variable mass model.

6. (Canceled)

7. (Original) The method of claim 1 wherein component models provided as options of the user interface may be extended by users.

8. (Currently Amended) The method of claim ~~2~~ 1 wherein after the second component model is selected in the user interface, the second component model is incorporated into the model of the target system through the first block.

9. (Currently Amended) The method of claim ~~2~~ 1 wherein the first component model has a same configuration of external ports that can be of input or output type as the second component model.

10. (Currently Amended) The method of claim ~~2~~ 1 wherein the first component model has a different configuration of external ports that can be of input or output type as the second component model.

11. (Currently Amended) The method of claim ~~2~~ 1 wherein the first block represents one of the first component model and the second component model depending on users' selection of the first component model and the second component model.

12. (Canceled)

13. (Previously Presented) A computer-implemented method for modeling a target system , the method comprising:

identifying a first block that represents multiple component models in a block diagram model of a target system;

displaying a user interface in response to a user action, where the user action includes selecting the first block, the user interface including a mechanism that provides the user with the multiple component models; and

receiving a user selection that selects a first component model from the multiple component models;

incorporating the first component model into the model of the target system using the block;

saving the model of the target system that includes the first component model in a memory;

switching the first block to represent a second component model by selecting the second component model in the user interface; and

incorporating the second component model into the model of the target system by one of

copying or referring to the second component model in the block,

conditionally evaluating at least a part of the component model, or

executing a sequence of modifications to the component model.

14. (Canceled)

15. (Currently Amended) The method of claim ~~14~~ 13 wherein the component models belong to a category of atmosphere models that include at least a non standard day atmosphere model.

16. (Currently Amended) The method of claim ~~14~~ 13 wherein the component models belong to a category of wind turbulence models that include at least a discrete turbulence model.

17. (Currently Amended) The method of claim ~~14~~ 13 wherein the component models belong to a category of equations of motion models that include at least one simple variable mass model and at least one custom variable mass model.

18. (Canceled)

19. (Original) The method of claim 13 wherein component models provided as options of the user interface may be extended by users.

20. (Currently Amended) The method of claim ~~14~~ 13 wherein after the second component is selected in the user interface, the second component model is incorporated into the model of the target system through the first block.

21. (Currently Amended) The method of claim ~~14~~ 13 wherein the first component model has a same configuration of external ports that can be of input or output type as the second component model.

22. (Currently Amended) The method of claim ~~14~~ 13 wherein the first component model has a different configuration of external ports that can be of input or output type as the second component model.

23. (Currently Amended) The method of claim ~~14~~ 13 wherein the first block represents one of the first component model and the second component model depending on users' selection of the first component model and the second component model.

24. (Currently Amended) The method of claim ~~14~~ 13 wherein the first component model is switched to the second component model without replacing the first block by a second block representing the second component model.

25. (Previously Presented) A computer implemented system for designing a target system in which a planetary environment is one of the factors for designing the target system, the system comprising:

a model storage for storing and providing models necessary to design the target system;

a design unit for designing the target system by utilizing the models provided by the model storage; and

a memory for saving a model of the target system,

wherein the model storage includes at least one non-standard day atmosphere model.

26. (Original) The system of claim 25 further comprising an execution unit for executing the target system designed in the design unit.

27. (Original) The system of claim 26 wherein the execution unit is realized through a process of automatic code generation from the design unit.

28. (Previously Presented) The system of claim 26, wherein numerical representations of the models including data type, precision and data vectorization of the models are automatically derived from the context of using the models when executing the models.

29. (Original) The system of claim 25 wherein the non-standard day atmosphere model includes a model incorporating a non-standard day atmosphere from one of military standard specifications MIL-HDBK-310 and MIL-STD-210C.

30. (Original) The system of claim 25 wherein the model storage includes standard atmosphere models.

31. (Previously Presented) The system of claim 30 wherein the standard atmosphere model includes a Committee on Extension to the Standard Atmosphere (COESA) atmosphere model.

32. (Original) The system of claim 25 wherein the models provided from the model storage are represented in symbols.

33. (Original) The system of claim 32 wherein the symbols include blocks.

34. (Original) The system of claim 33 wherein the design unit provides a user interface to enter parameters for each block of the target system in response to an action taken by users.

35. (Original) The system of claim 34 wherein the user interface is provided in response to users clicking each block of the target system.

36. (Original) The system of claim 34 wherein the user interface provides an option to select one of the atmosphere models in the model storage.

37. (Original) The system of claim 36 wherein the atmosphere models in the model storage are provided in the user interface in response to an action taken by users.

38. (Previously Presented) A computer implemented system for designing a target system in which a planetary environment is one of the factors for designing the target system, the system comprising:

a model storage for storing and providing models necessary to design the target system;

a design unit for designing the target system by utilizing the models provided by the model storage; and

a memory for saving a model of the target system,

wherein the model storage provides a plurality of wind turbulence models including at least a discrete wind turbulence model.

39. (Original) The system of claim 38 further comprising an execution unit for executing the target system designed in the design unit.

40. (Original) The system of claim 39 wherein the execution unit is realized through a process of automatic code generation from the design unit.

41. (Previously Presented) The system of claim 39, wherein numerical representations including data type, precision and data vectorization of the models are automatically derived from the context of using the models when executing the models.

42. (Original) The system of claim 38 wherein the plurality of wind turbulence model includes a model incorporating a wind turbulence model from one of military specifications MIL-HDBK-1797 and MIL-STD-8785C.

43. (Original) The system of claim 38 wherein the plurality of wind turbulence models includes wind turbulence models that are continuous in altitude.

44. (Original) The system of claim 38 wherein the plurality of wind turbulence models includes wind turbulence models at altitudes within multiple transition regions between the multiple regions for wind turbulence models.

45. (Original) The system of claim 44 wherein the plurality of wind turbulence models includes a wind turbulence model at an altitude in a transition region between first and second regions.

46. (Original) The system of claim 45 wherein the wind turbulence models in the first and second regions being defined in military specifications.

47. (Original) The system of claim 44 wherein the wind turbulence models within a plurality of transition regions generate values of the wind turbulence model by transition methods between the multiple regions for wind turbulence.

48. (Original) The system of claim 47 wherein the transition method of the wind turbulence model within a single transition region may contain a plurality of transition methods.

49. (Original) The system of claim 48 wherein the plurality of transition methods may overlap.

50. (Original) The system of claim 47 wherein the wind turbulence model in the transition region generates values of the wind turbulence model by linearly interpolating between values of wind turbulence models between the plurality of transition regions.

51. (Original) The system of claim 44 wherein the wind turbulence model transforms coordinates of the wind turbulence model in a plurality of regions to a common coordinate system.

52. (Previously Presented) The system of claim 51 wherein the common coordinate system is the coordinates of the wind turbulence model in one of the plurality of regions.

53. (Original) The system of claim 52 wherein the wind turbulence model transforms coordinates of the wind turbulence model in the first region to coordinates of the wind turbulence model in the second region.

54. (Original) The system of claim 38 wherein the models provided from the model storage are represented in symbols.

55. (Original) The system of claim 54 wherein the symbols include blocks.

56. (Original) The system of claim 55 wherein the design unit provides a user interface to enter parameters for each block of the target system in response to an action taken by users.

57. (Original) The system of claim 56 wherein the user interface is provided in response to users clicking each block of the target system.

58. (Original) The system of claim 56 wherein the user interface provides an option to select one of the wind turbulence models from the model storage.

59. (Original) The system of claim 58 wherein the wind turbulence models from the model storage are provided in the user interface in response to an action taken by users.

60. (Previously Presented) A computer implemented system for designing a target system in which an aerospace or aeronautic model is one of the elements for designing the target system, the system comprising:

a model storage for storing and providing models necessary to design the target system;

a design unit for designing a model of the target system by utilizing the models provided by the model storage; and

a memory for saving the model of the target system, wherein the model storage provides a plurality of models for equations of motion, wherein the plurality of models for equations of motion include at least one model for equations of motion with simple variable mass and at least one model for equations of motion with custom variable mass.

61. (Original) The system of claim 60 further comprising an execution unit for executing the target system designed in the design unit.

62. (Original) The system of claim 61 wherein the execution unit is realized through a process of automatic code generation from the design unit.

63. (Previously Presented) The system of claim 61, wherein numerical representations including data type, precision and data vectorization of the models are automatically derived from the context of using the models when executing the models.

64. (Original) The system of claim 60 wherein the models for equations of motion include models for one of three-degree-of-freedom equations of motion and six-degree-of-freedom equations of motion.

65. (Currently Amended) The system of claim 60 wherein the plurality of models for equations of motion are implemented in multiple axes representations.

66. (Currently Amended) The system of claim 65 wherein the plurality of models for equations of motion are implemented in one of body axes and wind axes.

67. (Original) The system of claim 60 wherein the models provided from the model storage are represented in symbols.

68. (Original) The system of claim 67 wherein the symbols include blocks.

69. (Original) The system of claim 68 wherein the design unit provides a user interface to enter parameters for each block of the target system in response to an action taken by users.

70. (Original) The system of claim 69 wherein the user interface is provided in response to users clicking each block of the target system.

71. (Original) The system of claim 69 wherein the user interface provides an option to select one of the equations of motion models in the model storage.

72. (Original) The system of claim 71 wherein the equations of motion models in the model storage are provided in the user interface in response to an action taken by users.

73. (Previously Presented) A computer-readable medium holding instructions executable in a computer for the design of a target system, wherein a planetary environment is one of the factors for designing the target system, the instructions comprising:

instructions for providing atmosphere models necessary to design the target system; and

instructions for incorporating the atmosphere models to the target system,

the atmosphere models including non-standard day atmospheric models.

74. (Previously Presented) The medium of claim 73 further holding instructions for executing behavior of the target system designed.

75. (Original) The medium of claim 73 wherein the atmosphere models are represented by blocks.

76. (Previously Presented) The medium of claim 75 wherein the instructions for incorporating comprise instructions for providing a graphical user interface in response to an action taken by a user.

77. (Original) The medium of claim 76 wherein the graphical user interface is provided in response to users clicking the blocks representing atmospheric models.

78. (Original) The medium of claim 76 wherein the graphical user interface provides an option to change an atmosphere model to another atmosphere model.

79. (Previously Presented) The medium of claim 76 wherein the graphical user interface provides blanks to enter parameters of the atmosphere models to produce outputs of the atmosphere models.

80. (Previously Presented) A computer-readable medium holding instructions executable in a computer for the design of a target system, wherein a planetary environment is one of factors for designing the target system, the instructions comprising:

instructions for providing wind turbulence models necessary to design the target system wherein the wind turbulence model includes at least one discrete wind turbulence model; and

instructions for incorporating the wind turbulence models to the target system.

81. (Previously Presented) The medium of claim 80 further holding instructions for executing behavior of the target system designed.

82. (Original) The medium of claim 80 wherein the wind turbulence models are represented by blocks.

83. (Previously Presented) The medium of claim 82 wherein the instructions for incorporating comprise instructions for providing a graphical user interface in response to an action taken by a user.

84. (Previously Presented) The medium of claim 83 wherein the graphical user interface is provided in response to users clicking the blocks representing wind turbulence models.

85. (Original) The medium of claim 83 wherein the graphical user interface provides an option to change a wind turbulence model to another wind turbulence model.

86. (Original) The medium of claim 83 wherein the graphical user interface provides blanks to enter parameters of the wind turbulence models to produce outputs of the wind turbulence models.

87. (Previously Presented) A computer-readable medium holding instructions executable in a computer for the design of a target system, the instructions for comprising:

instructions for providing equations of motion models necessary to design the target system wherein the equations of motion models include at least one of simple variable mass models and custom variable mass models; and

instructions for incorporating the equations of motion models into the target system.

88. (Original) The medium of claim 87 wherein the equations of motion models include at least one of three-degree-of-freedom equations of motion models and six-degree-of-freedom equations of motion models.

89. (Previously Presented) The medium of claim 87 further holding instructions for executing behavior of the target system designed.

90. (Original) The medium of claim 87 wherein the equations of motion models implemented in multiple axes representations.

91. (Original) The medium of claim 90 wherein the equations of motion models implemented in one of body axes and wind axes.

92. (Original) The medium of claim 87 wherein the equations of motion models are represented by blocks.

93. (Previously Presented) The medium of claim 92 wherein the instructions for incorporating comprise instructions for providing a graphical user interface in response to an action taken by a user.

94. (Original) The medium of claim 93 wherein the graphical user interface is provided in response to user's clicking the blocks representing the equations of motion models.

95. (Original) The medium of claim 93 wherein the graphical user interface provides an option to change an equations of motion model to another equations of motion model.

96. (Original) The medium of claim 93 wherein the graphical user interface provides blanks to enter parameters of the equations of motion models to produce outputs of the equations of motion models.